


**PATENT**  
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Signature 

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Date

In re application of:

Tawil et al.

Serial No.: 09/770,571

Filed: January 26, 2001

Title: System and Method for Host Based  
Target Device Masking Based on  
Unique Hardware Addresses

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Group No.: 2152

Examiner: Philip C. Lee

### RCE AMENDMENT AND REMARKS

In response to the Final Office Action mailed January 2, 2008, Applicants submit this response and respectfully request reconsideration of the Examiner's rejections.

### **Amendments to the Claims**

A complete list of pending claims follows, with indicated amendments:

1. (Previously Amended) A storage area network comprising:
  - a high speed network interconnect;
  - multiple target devices coupled to the high speed network interconnect, wherein each target device has a unique hardware address;
  - multiple host devices, wherein each host device comprises a host bus adapter operable to perform a port login with a target device; and
  - a centralized unique hardware address table stored in a memory location separate from and accessible by each host bus adapter, wherein the unique hardware address table stores the unique hardware address of every target device that each respective host is authorized to access such that the host bus adapter for each respective host will not attempt to perform a port login with a target device unless the unique hardware address of that target device is present on the unique hardware address table as a target device that the respective host is authorized to access.
2. (Original) The storage area network of claim 1, wherein the unique hardware address is a port name.
3. (Original) The storage area network of claim 1, wherein the unique hardware address is a node name.

4. (Original) The storage area network of claim 1, wherein the unique hardware address is a World-Wide Name.

5. (Previously Amended) The storage area network of claim 1, wherein at least one target device is a storage device.

6. Cancelled.

7. (Original) The storage area network of claim 1, wherein the high speed network interconnect is a high speed optical network interconnect.

8. (Original) The storage area network of claim 1, wherein the high speed network interconnect is a Fibre Channel fabric.

9. (Previously Amended) A method for managing a port login performed by a host bus adapter for a host that is communicatively coupled to a fabric, wherein one or more target devices, each having a unique hardware address, are coupled to the fabric; comprising the steps of:

from the host bus adapter, querying the fabric for available target devices;

receiving at the host bus adapter an identification of available target devices;

determining whether the unique hardware address of an available target device is present on a centralized unique hardware address table stored in a memory location separate from

and accessible by the host bus adapter, wherein the unique hardware address table contains the unique hardware addresses of each target device that the host is authorized to access; and performing a port login with each target device whose unique hardware address is present on the unique hardware address table.

10. (Original) The method of claim 9, wherein the unique hardware address is a port name.
11. (Original) The method of claim 9, wherein the unique hardware address is a node name.
12. (Original) The method of claim 9, wherein the unique hardware address is a World-Wide Name.
13. (Original) The method of claim 9, wherein the target device is a storage device.
14. Cancelled.
15. (Original) The method of claim 9, wherein the fabric is a Fibre Channel fabric.
16. (Previously Amended) A method for managing a port login performed by a host bus adapter for a host that is communicatively coupled to a fabric, wherein one or more target

devices, each having a unique hardware address, are coupled to the fabric; comprising the steps of:

from the host bus adapter, querying the fabric for available target devices which the host bus adapter is authorized to access;

receiving at the host bus adapter an identification of available target devices which the host bus adapter is authorized to access;

selecting target devices that may be accessed by the host from the identification of available target devices which the host bus adapter is authorized to access; and

storing the unique hardware address of the selected target devices to a centralized unique hardware address access table, wherein the host bus adapter will not perform a port login with a target device unless the unique hardware address of the target device is present on the unique hardware address table.

17. (Original) The method of claim 16, wherein the unique hardware address is a port name.

18. (Original) The method of claim 16, wherein the unique hardware address is a node name.

19. (Original) The method of claim 16, wherein the unique hardware address is a World-Wide Name.

20. (Original) The method of claim 16, wherein the target device is a storage device.

21. Cancelled.
22. (Original) The method of claim 16, wherein the fabric is a Fibre Channel fabric.
23. Cancelled.
24. Cancelled.
25. Cancelled.
26. Cancelled.
27. Cancelled.
28. Cancelled.
29. (Previously Amended) A computer system comprising:  
a host bus adapter operable to perform a port login;  
a memory;  
a centralized unique hardware address access table in memory separate from and accessible by the host bus adapter, operable to contain one or more unique hardware addresses corresponding to one or more target devices with which the host bus adapter is authorized to attempt to perform a port login.

30. (Original) The computer system of claim 29, wherein the unique hardware address is a port name.

31. (Original) The computer system of claim 29, wherein the unique hardware address is a node name.

32. (Original) The computer system of claim 29, wherein the unique hardware address is a World-Wide Name.

33. (Original) The computer system of claim 29, wherein the target device is a storage device.

34. Cancelled.

### **Remarks**

Claims 1-5, 7-13, 15-20, 22, and 29-33 are pending in this application. Claims 6, 14, 21, 23-28, and 34 have been previously cancelled. Claims 1-5, 7-13, 15-20, 22, and 29-33 are rejected. Claims 1-3, 5, 7-8, 29-31 and 33 are rejected under 35 U.S.C. § 103(a) as being obvious over the combination of U.S. Patent No. 6,606,630 to Gunlock (hereinafter “Gunlock”) in view of U.S. Patent No. 6,931,440 to Blumenau et al (hereinafter “Blumenau”) and further in view of U.S. Patent Application Publication 2002/0083339 to Blumenau et al (hereinafter “Blumenau et al”). The Examiner rejected claims 16-20 and 22 as being obvious over the combination of Gunlock, Blumenau, and U.S. Patent No. 6,665,714 to Blumenau et al (hereinafter “Blumenau et al, 6,665,714”) in view of Blumenau et al. The Examiner rejected claims 4, 9-13, 15, and 32 under 35 U.S.C. § 103(a) as being obvious over the combination of Gunlock, Blumenau, and Blumenau et al in view of the further combination of Blumenau et al, 6,665,714.

#### **I. Rule 131 Affidavit**

##### **A. The Invention Disclosure Form Shows the Applicants Conceived the Invention Prior to December 22, 2000**

In the Office Action, the Examiner noted that Invention Disclosure Form DC-02668 (hereinafter, “IDF”) may be used to show conception of the invention, but that the Applicants did not explain how the document establishes that the Applicants conceived every limitation of the claimed invention. (Office Action at 18).

With respect to independent claim 1, the IDF discloses a “switched fabric” or “fabric” which at least discloses “a high speed interconnect.” (See illustration at 4 which shows a “fabric consisting of switches,” and the discussion of the fabric at 5).



The IDF also discloses the presence of multiple storage devices connected to the fabric which provide their World Wide Name to the fabric during the login process. (IDF at 5). This at least discloses “multiple target devices [the storage devices] coupled to the high speed network interconnect, wherein each target device has a unique hardware address [World Wide Name].”

The illustration shows two separate hosts, each with its own host bus adapter. (See “Host A with single HBA 1” and “Host Z with single HBA 1” in Illustration at 5). The IDF further discloses the ability of the host bus adapters to perform a port login to a storage device. (“[T]he HBA will then initiate a [port login] to storage device.” IDF at 5). Thus, the IDF at least discloses “multiple host devices, wherein each host device comprises a host bus adapter operable to perform a port login with a target device.”

Finally, the IDF discloses that “[t]his solution restricts by default the [host bus adapters] from logging in with each storage device . . . until the [host bus adapter] has been configured to login with [a] specific storage device.” (IDF at 5). This is an implementation of the limitation which requires “a centralized unique hardware address table stored in a memory location separate from and accessible by each host bus adapter, wherein the unique hardware address table stores the unique hardware address of every target device that each respective host is authorized to access such that the host bus adapter for each respective host will not attempt to perform a port login with a target device unless the unique hardware address of that target device is present on the unique hardware address table as a target device that the respective host is authorized to access.” The presence of the “unique hardware address table stored in a memory location separate from and accessible by each host bus adapter” is suggested by the discussion of the application used to configure the host bus adapters. The application presents a list of storage

devices after retrieving their World Wide Names from the fabric. (IDF at 5). The user then chooses which devices are authorized to be accessed by a host bus adapter based on the devices' World Wide Names. (IDF at 5). The application has the ability to program this list into the host bus adapters which may also retain the list in a table on the host bus adapter. (IDF at 5). Finally a particular implementation of the authorization checking is suggested in the IDF where it states "each HBA checks each WWN of the storage device saved in the HBA" and only initiates a port login if the device name matches one of the entries on the list of devices the user choose from the application. (IDF at 5).

Independent claims 9, 16, and 29 are not discussed herein because the Applicants believe that the discussion of claim 1 above is sufficient to show that the Applicants possessed all of the features recited by the claims as of the date of the IDF.

#### **B. Applicants Diligently Prepared and Filed the Present Application**

The Office Action states that the previously filed declaration failed to show diligence because there is a large gap of unaccounted for time. (Office Action at 19).

With this filing, the Applicants submit the Second Declaration of Khannan Suntharam. This declaration shows that Mr. Suntharam had a reasonable backlog of unrelated cases which he took up in chronological order and carried out expeditiously. (Second Declaration at 2-4). The Applicants further note that the critical period included the Christmas and New Year's holidays.

The Applicants assert that this Second Declaration establishes that the present application was diligently prepared and filed. *See* MPEP § 2138.06 ("Reasonable diligence is all that is required of the attorney. . . . If the attorney has a reasonable backlog of unrelated cases

which he takes up in chronological order and carries out expeditiously, that is sufficient.” citing *Bey v. Kollonitsch*, 866 F.2d 1024 (Fed. Cir. 1986)).

### **C. Blumenau et al Should Be Removed From the Prior Art**

The Applicants have shown that the present invention was conceived before the filing date of Blumenau et al on December 22, 2000 and that the Applicants and their counsel were diligent with respect to constructively reducing the invention to practice during the continuous critical period, from a time just prior to December 22, 2000 to the filing date of this application on January 26, 2001. As such, Applicants request that Blumenau et al be removed as a reference.

## **II. Rejections Under 35 U.S.C. § 103(a)**

### **A. Blumenau et al Does Not Qualify as Prior Art**

Blumenau et al does not qualify as prior art under 35 U.S.C. § 102(e)(1) because the Applicants have shown that the present invention was conceived prior to the filing date of the patent publication. Therefore, a rejection under 35 U.S.C. § 103(a) cannot rely on Blumenau et al. The Applicants respectfully request that the Examiner withdraw his rejection of claims 1, 9, 16 and 29.

### **B. Dependent Claims**

Dependent claims 2-8, 10-13, 15, 17-20, 22 and 30-33 will not be discussed individually herein, as each of these claims depends, either directly or indirectly, from an otherwise allowable base claim.

## **III. No Waiver**

All of Applicants’ arguments are without prejudice or disclaimer. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the

Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

**Conclusion**

Applicants respectfully submit that pending claims 1-5, 7-13, 15-20, 22 and 29-33 of the present invention are allowable. Applicants respectfully request that the rejection of these claims be withdrawn and that these claims be passed to issuance.

Respectfully submitted,



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